

ABSTRACT OF THE DISCLOSURE

A system and method for determining, during a pre-rotation period, a proper transfer bias for colors, e.g. YMCK. These proper transfer bias voltages are applied to a primary transfer roller, which enables proper transfer of color images from a photoconductive drum. Four exposure bias voltages for each of YMCK are determined. The first exposure bias voltage for Y is applied to the photoconductive drum, while three predetermined voltages are applied to a primary transfer roller in order to obtain corresponding currents and a voltage/current relationship thereof, from which a proper transfer bias voltage for Y is determined. For all subsequent colors, a proper transfer bias voltage for each subsequent color is determined by employing the Y exposure bias voltage and the exposure bias voltage for each the subsequent colors, MCK. In an exemplary embodiment, it is noted that the proper transfer voltages are obtained during pre-rotation in which the primary transfer roller rotates no more than three times.